

Page 5, line 6, "gasses" was changed to --gases--. The effected paragraph is presented below:

A typical prior art conduit made from palladium or a palladium alloy would have a wall thickness of approximately 80 $\mu$ m. The thickness of the wall of the conduit is inversely proportional to the amount of purified hydrogen that passes through that wall in a given period of time. As such, in order to make the conduit more efficient, a thinner wall is desirable. However, as has already been stated, a conduit wall cannot be made so thin that it ruptures or collapses under the pressure of the ~~gasses~~ gases being passed through that conduit.

On Page 8, line 20, --in-- was inserted after "differences".

On Page 9, line 5, --the—was inserted before "system". The effected paragraph is presented below.

U.S. Patent No. 6,152,987 to Ma, entitled Hydrogen Gas-Extraction Module And Method Of Fabrication, discloses a hydrogen separator where a solid layer of hydrogen permeable material is deposited over a porous substrate of dissimilar material. The porous substrate supports the hydrogen permeable material and provides much more support than prior art mesh support systems. However, the porous substrate only allows gas to contact the hydrogen permeable material where a pore gap is exposed to the hydrogen permeable material. This configuration greatly limits the area of hydrogen permeable material actually exposed to gas. Furthermore, due to differences in thermal coefficients and other physical properties, hydrogen permeable material deposited on a substrate of a dissimilar material tends to separate from the substrate. This can cause leakage of contaminated gas through the hydrogen permeable material and the eventual failure of the system.

On Page 9, line 12, --a-- was inserted after "using". The effected paragraph is presented below.

U.S. Patent Application No. 2003/0190486 to Roa et al, also discloses a hydrogen separator where a solid layer of hydrogen permeable material is deposited over a porous substrate of dissimilar material. In the Roa application, a palladium alloy is deposited over the porous substrate of dissimilar material using a first electroplating process. Copper is then deposited on the palladium in a second electroplating process. The palladium and copper layers are then annealed to produce a palladium alloy in place on the substrate. However, the porous substrate only allows gas to contact the hydrogen permeable material where a pore gap is exposed to the hydrogen permeable material. This configuration greatly limits the area of hydrogen permeable material actually exposed to gas.

On Page 26, line 3, "gasses" was changed to -gases--. The effected paragraph is presented below.

Thus, in operation, contaminated gas enters the conduit 22 in the center of the composite hydrogen separator 20. The contaminated gas passes through the pores in the base layer 30 of the wall 24. The contaminated gas also passes through the pores in the first porous hydrogen permeable layer 32 until it contacts the deposited solid layer 34. The deposited solid layer 34 blocks all ~~gasses~~ gases except hydrogen. The hydrogen permeates through the solid layer 34 where the hydrogen gas directly contacts the solid layer 34. However, the hydrogen gas can also permeate into the areas of the first porous hydrogen permeable layer 32 that are contacting and supporting the deposited solid layer 34. As a result, a very large surface area is available through which hydrogen gas can pass.

Page 27, line 16 , "microns" was deleted. The effected paragraph is presented below.

As has been previously mentioned, various layers of the wall 24 of the composite hydrogen separator 20 can be made in different ways. Referring to Fig. 3, it will be understood that the base layer 30 is preferably a sintered metal that is sintered into a porous form having a pore ~~pore~~ size of approximately 0.5  $\mu\text{m}$  to 0.9  $\mu\text{m}$ . An average pore size of 0.7  $\mu\text{m}$  ~~microns~~ being preferred and used by way of example. Because of the overall process flexibility and geometric scaling, there is a considerable variation in possible average pore diameter. The base layer 30 can be sintered in the desired form 41 or a sintered block can be machined into the desired base form 41. In the shown example, the desired base form 41 is a tubular section.

On Page 31, line 4, "material of" was changed to --materials--. The effected paragraph is presented below.

It will be understood that the ~~material of~~ materials described for the bonding layers 33, 35, 37 are exemplary and can be changed. For instance, the first two bonding layers 33, 35 can be made from material that is not hydrogen permeable. The third bonding layer 37 can be made permeable to hydrogen and alloy-forming with subsequent layers for diffusion bonding.

Page 47, line 11, --the—was inserted before “first”. On Page 47, line 14, “on” was deleted. The effected paragraph is presented below.

A second layer of hydrogen permeable material 86 is then deposited over the first layer of hydrogen permeable material 84. The second layer of hydrogen permeable material 86 can be partially etched to increase the surface area ~~on~~ exposed on its top. However, the etching of the second layer of hydrogen permeable material 86 is only partial and the second later of hydrogen permeable material 86 remains as a solid barrier over the first porous layer of hydrogen permeable material 84.